

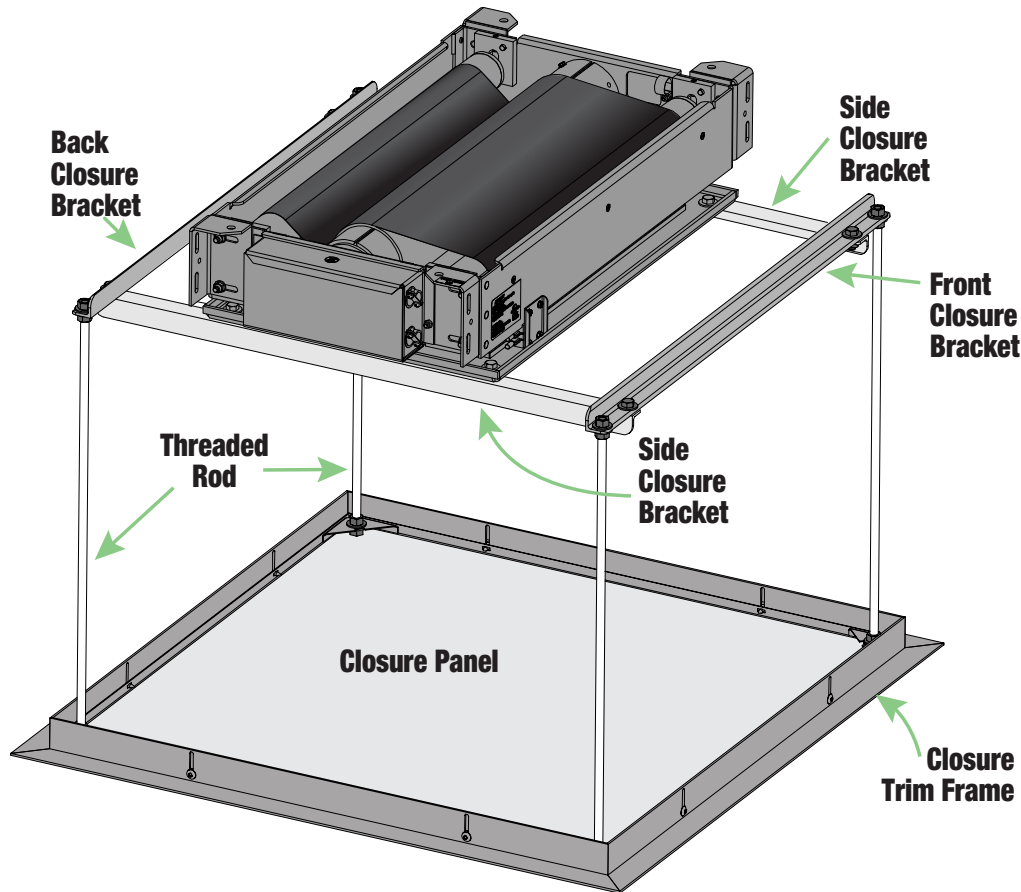
AeroLift 100/150

Ceiling-recessed projector lift with a 100 lb (45kg) or 150 lb (68kg) lifting capacity

INSTRUCTIONS

INSTALLATION & OPERATION

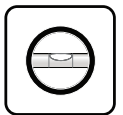
Overview - Components (Aerolift 100 shown)



TOOLS REQUIRED



PENCIL



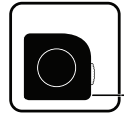
LEVEL



POWER DRILL



HARDWARE (by others)



TAPE MEASURE



PLIERS



HEX WRENCH



SCREWDRIVER

⚠ CAUTION ⚠

Read and understand all warnings (Page 2 of this document) before beginning installation.

Overview - Planning

1. Based on screen location and projector specifications, determine proper position for projector installation.
2. Confirm that there is adequate space for installation and operation. Minimum clearance above ceiling level varies according to height of projector, optional projector mounting bracket, optional ceiling closure and optional Environmental Housing.
3. Arrange to provide service access to the unit.
4. When installed with Environmental Air Space Housing unit is suitable for use in an environmental air space in accordance with Section 300.22(C) of the National Electrical Code, and Section 2-128, 12-010(3) and 12-100 of the Canadian Electrical Code, Part 1, CSA C22.1.
5. Total capacity of lift is 100 or 150 lbs, including closure, projector, and bracket.

As Soon As AeroLift 100/150 Arrives

1. Open carton and inspect for damage.
2. Locate the following parts:
 - A. The unit itself
 - B. Controls
 - C. Any optional equipment

Contents

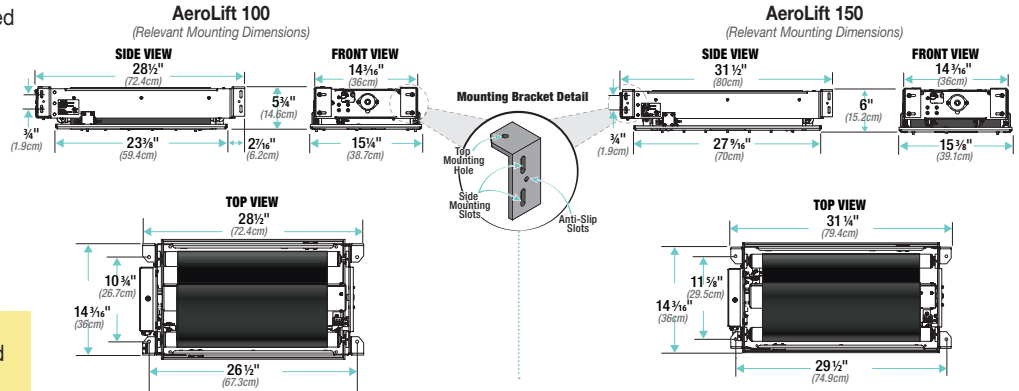
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If you have any difficulties installing or servicing your AeroLift 100/150, call your dealer or Draper, Inc.

Section 1 - Hanging Unit

The AeroLift 100/150 ships with four (4) mounting angles for suspending the unit from above, or direct mounting from the sides. These angles provide up to 1½" (38mm) of adjustment (front to back). The AeroLift 100/150 will fit between joists spaced 16" (406mm) apart on center (assuming 2" joists), and will close approximately to 6" (152mm), not including the projector, bracket, or closure. The unit should be guy wired or blocked to prevent swinging. All installations should observe the following guidelines:

1. Installer must ensure that all fasteners and supports are of adequate strength to securely support AeroLift 100/150 and projector. Hardware structure should hold at least four times the combined weight of the lift, projector, housing, closure, and ceiling material attached to closure.
2. Fastening methods must be suitable for mounting surface, and securely anchored so that vibration or abusive pulling on unit will not weaken installation.
3. Bottom of unit must be unobstructed after installation. Sufficient clearance must be allowed below projector or optional ceiling closure.
4. Do not use unit to support adjacent ceiling, light fixtures, etc.
5. Do not complete the ceiling below unit until electrical connections have been completed and unit has been operated successfully.
6. Use slots on the projector plate and on the closure to adjust the unit to ensure proper alignment of ceiling closure relative to ceiling opening.



CAUTION: DO NOT hang from, "ride" or pull down on the unit. This could create a failure and cause damage and/or injury.

PLEASE READ - Safety Information

Important Safety Information



WARNING

Important Safety Information

Improper installation and use of the AeroLift 100 / 150 Projector Lift can result in serious injury or death. Primarily, injuries can occur when the unit falls due to imprecise installation, mishandling of the unit during installation or installation on an insufficient wall or ceiling structure. Please use extreme care.

When using an electrical mounting system, basic precautions should always be followed, including the following: Please read the following installation guidelines thoroughly before using this mounting system. Failure to do so may cause product to fall or otherwise fail and could result in serious injury.

Please Note: An appropriate disconnect device shall be provided as part of the building installation. AeroLift must be installed in accordance with the requirements of Local Building Codes, Canadian Electrical Code (CEC), CAN/CSA C22.1 and National Electric Code (NEC), NFPA 70.

DANGER - To reduce the risk of electric shock:

1. Remove power before cleaning.

WARNING - To reduce the risk of burns, fire, electric shock, or injury to persons.

2. Remove power before putting on or taking off parts.
3. Use this mounting system only for its intended use as described in these instructions. Do not use attachments not recommended by the manufacturer.
4. If AeroLift mounting system is not working properly, call your dealer or Draper, Inc., (765) 987-7999.
5. Never operate the mounting system with the air openings blocked.
6. Never drop or insert any object into any opening.
7. Do not use outdoors.
8. Installation and calibration of the unit should only be performed by an authorized, qualified, and experienced professional. In particular, electrical work and wiring [indicated in diagram by dashed lines] must be completed only by a qualified professional electrician who has read this manual completely and is familiar with the construction and operation of this equipment and the hazards involved.
9. Do not affix the unit to walls or ceilings that have inadequate strength to permanently hold the unit during use. It is the owner's and installer's responsibility to confirm the wall or ceiling to which the unit attaches is sufficient to permanently hold the weight and stress loads of the unit at all times. Draper®, Inc., is not responsible for improper installation, application, testing or workmanship related to the product at place of installation.
10. It is the installer's responsibility to make sure appropriate fasteners are used for mounting. All hardware must be installed level. Unit must be level and square.
12. Never leave the area while operating the unit during installation, maintenance, or normal operation, unless it is secure and safe.

13. Before testing or operation, carefully inspect the entire area and path (especially underneath) of unit to be sure no persons or objects are in the area.
14. Turn off power and any nearby equipment or cables carrying electricity before connecting switches, wires, controls, or electrical components.
15. Make sure the limit switches are pointed down or accessible when placing the motor in brackets.
16. All motors should be tested and limits set using test cord before unit is wired.
17. Do not wire motors in parallel without written permission from Draper, Inc.
18. During testing or operation, carefully watch the surrounding area for any potential safety concerns including nearby persons or objects.
19. After installation, the entire system, including all sensors, should be carefully tested to ensure safe and normal operation. Extreme care should be taken during testing to remain clear of moving parts to avoid possible injury.
20. Operation of unit should be performed only by authorized and qualified personnel, who have been trained in its safe and effective operation and understand its safety features.
21. The safety features of the unit should never be disabled, bypassed or overridden. The system should not be operated until all safety features are properly and completely installed, calibrated and tested.
22. Unit may need to comply with local, state, or district rules and regulations, in particular when installed in schools. All applicable rules and regulations should be reviewed before installation and use.
23. Failure to precisely follow installation guidelines invalidates all warranties.
24. Custom products/installations may not be reflected in this manual. Call Draper, Inc., if you have questions about the installation of custom products or any questions about your installation..

Before Beginning Installation

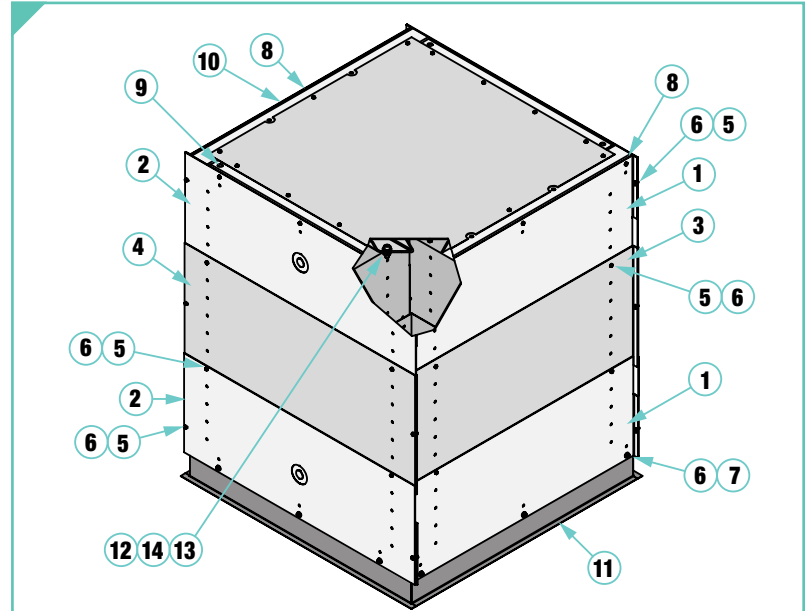
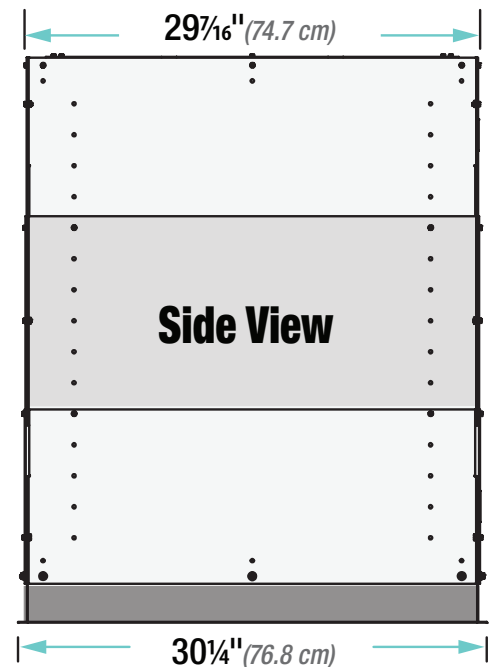
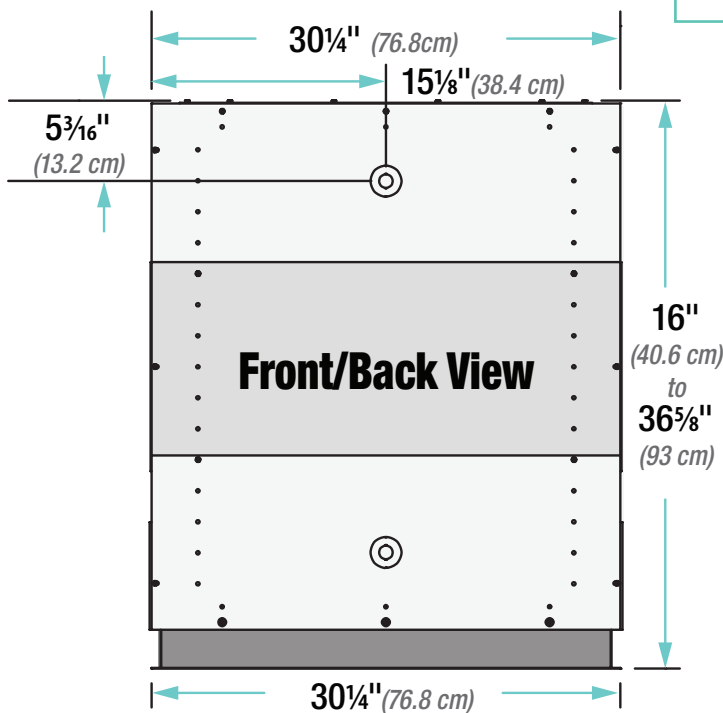
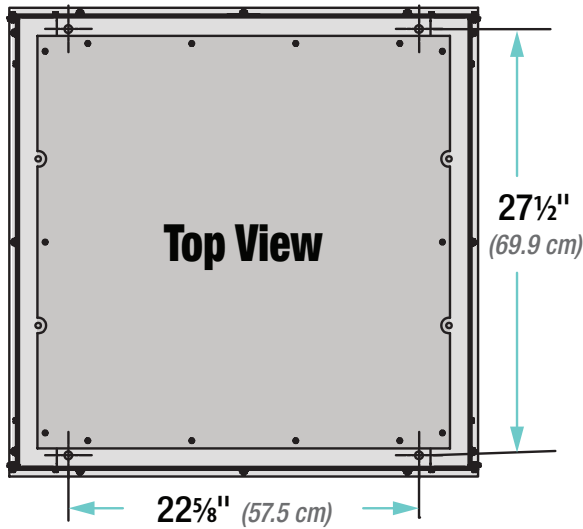
1. Look for any job site conditions that could interfere with installation or operation of the system.
2. Read carefully and be sure to understand all installation instructions and all related operations manuals. These instructions are intended to serve as a guide for the installer and owner. They should be followed closely and combined with the expertise of experienced qualified installers. Draper, Inc., is not responsible for improper installation, application, testing or workmanship related to the product at place of installation. Please retain all instructions for future use.
3. Open cartons lengthwise.
4. Locate and lay out all pieces.
5. Inspect all boxes to make sure you have received the proper unit and parts. Controls may be shipped separately, or in same carton as unit.
6. If you have any difficulties with installing, servicing, or operating your unit, call your dealer or Draper, Inc., 765-987-7999.

Section 2 - Installing Optional Environmental Air Space Housing for AeroLift 100

Please Note: Before assembling the housing, you will need to determine which assembly holes you will use, and knock them out.

The Environmental Air Space Housing is shipped unassembled, and must be assembled by the installer. The height of the Environmental Air Space Housing is set by punching out the knockouts at the desired locations then using screws to connect side panels. It is recommended when installing in a hard ceiling, to install an access panel for easy service or maintenance. The optional environmental air space housing must be installed to isolate the lift from the space designated for environmental air.

1. Attach Environmental Air Space Housing top frame to top of Lift with bolts provided.
2. Install top panel to Environmental Air Space Housing frame.
3. Attach assembly to overhead structure. Allow clearance between Environmental Air Space Housing top and structure for ease of future access.
4. Install side and end panels, and trim frame.



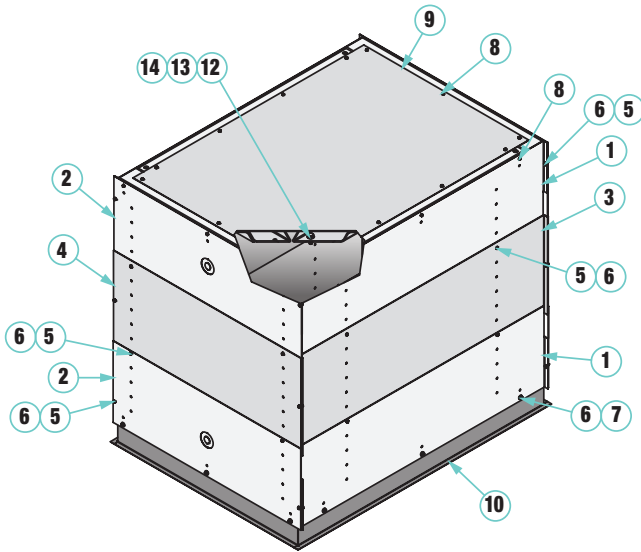
Item	Qty	Part Number	Description
1	4	C044.193SA	Panel, B Environmental Air Space Housing Side
2	4	C044.191SA	Panel, B Environmental Air Space Housing End
3	2	C044.192SA	Panel, B Environmental Air Space Housing Middle Side
4	2	C044.190SA	Panel, B Environmental Air Space Housing Middle End
5	28	C020.325	Screw, 8-32 X 3/8" (10mm) Type 1 HWH
6	40	C018.051	Nut #8-32 Zinc Hex Keps
7	12	C013.070	Washer, .188 I.D. x .5 O.D. x .07 TK Nylon Flat
8	26	C020.112	Screw, 8-32 X 3/8" (10mm) Type E F HWH
9	1	C028.609.01SA	Frame, B Environmental Air Space Housing
10	1	C095.130SA	Cover, B Environmental Air Space Housing
11	1	C028.610.07SA	Frame, B Trim Ring
12	4	C013.024	Washer, 3/8" (10mm) Flat
13	4	C018.044	Nut, 3/8" (10mm) -16 Zinc Hex Keps
14	4	C020.313	Screw, 3/8" (10mm) -16 x 1" (25mm) GR 5 Zinc Hex Head Cap

Section 3 - Installing Optional Environmental Air Space Housing for AeroLift 150

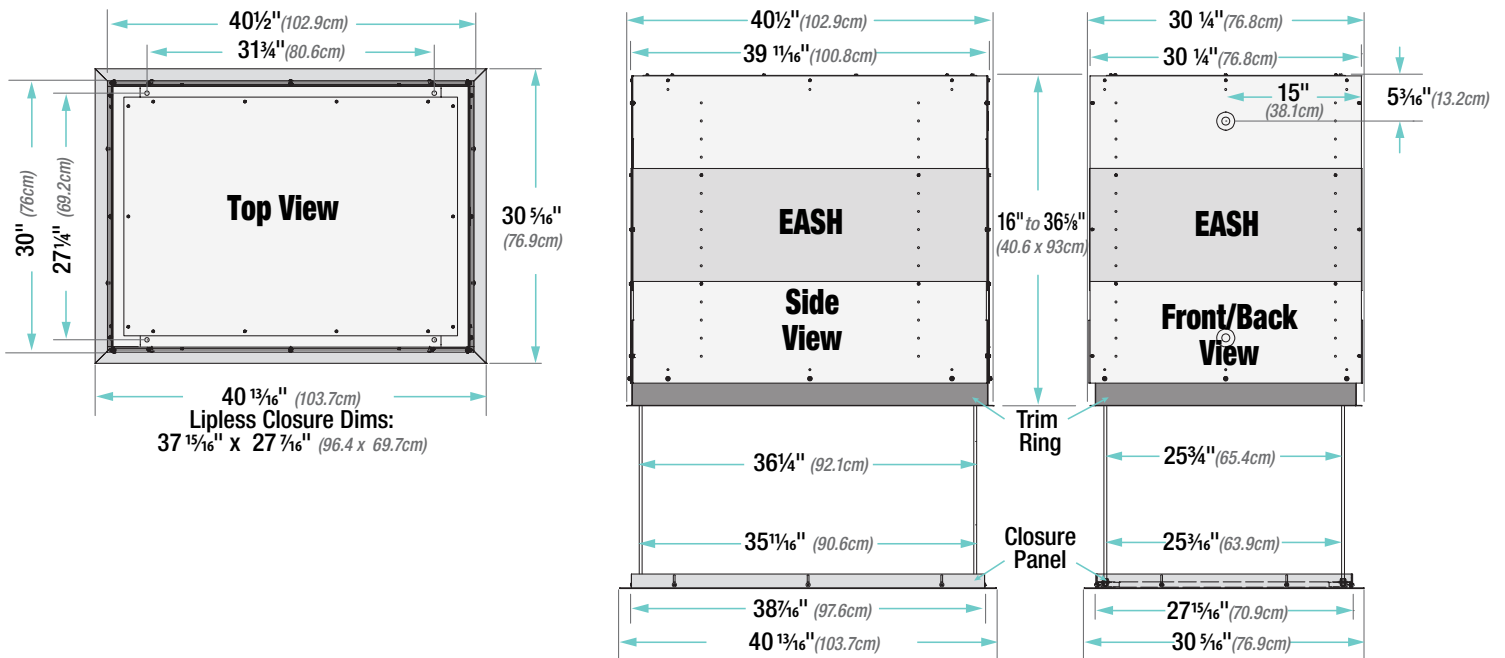
Please Note: Before assembling the housing, you will need to determine which assembly holes you will use, and knock them out.

The Environmental Air Space Housing is shipped unassembled, and must be assembled by the installer. The height of the Environmental Air Space Housing is set by punching out the knockouts at the desired locations then using screws to connect side panels. It is recommended when installing in a hard ceiling, to install an access panel for easy service or maintenance. The optional environmental air space housing must be installed to isolate the lift from the space designated for environmental air.

1. Attach Environmental Air Space Housing top frame to top of Lift with bolts provided.
2. Install top panel to Environmental Air Space Housing frame.
3. Attach assembly to overhead structure. Allow clearance between Environmental Air Space Housing top and structure for ease of future access.
4. Install side and end panels, and trim frame.



Item	Qty	Part Number	Description
1	4	C044.198SA	Panel, E Environmental Air Space Housing Side
2	4	C044.196SA	Panel, E Environmental Air Space Housing End
3	2	C044.197SA	Panel, E Environmental Air Space Housing Middle Side
4	2	C044.195SA	Panel, E Environmental Air Space Housing Middle End
5	28	C020.325	Screw, 8-32 X 3/8" (10mm) Type 1 HWH
6	40	C018.051	Nut #8-32 Zinc Hex Keps
7	12	C013.070	Washer, .188" I.D. x .5" O.D. x .07" TK Nylon Flat (5mm I.D. x 13mm O.D. x 2mm)
8	26	C020.112	Screw, 8-32 X 3/8" (10mm) Type F HWH
9	1	C095.131SA	Cover, E Environmental Air Space Housing Top
10	1	C028.612.07SA	Frame, E Trim Ring
11	1	C028.611.01SA	Frame, E Environmental Air Space Housing Top
12	4	C020.313	Screw 3/8" (10mm) -16 x 1" (25mm) GR 5 Zinc Hex Head Cap
13	4	C013.024	Washer, 3/8" (10mm) Flat
14	4	C018.044	NUT 3/8" (10mm) -16 Zinc Hex Keps



Section 4 - Installing Projector

Draper's optional Universal Projector Mount will hold up to 200 lb (90.7kg).

See Installation Instructions included with Universal Projector Mount.

If not using Draper's Universal Projector Mount, generally the video projector should be suspended from the bottom pan according to projector manufacturer's instructions.

Aerolift 100: If installing with a closure, maximum projector size is: 20" x 25" x h. (50.8 x 63.5 cm) (width x length x height).

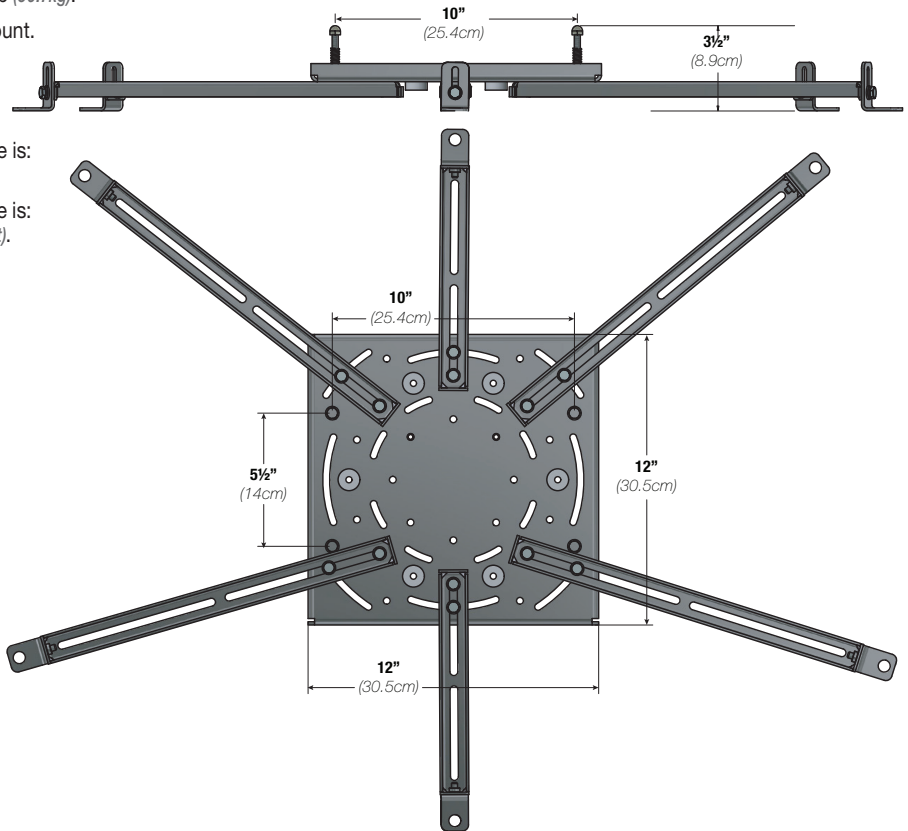
Aerolift 150: If installing with a closure, maximum projector size is: 24 3/4" x 35" x h. (62.9 x 88.9 cm) (width x length x height).

The traveling pan is drilled to accept Draper universal mounts.

If for any reason the hole placement must be changed, completely lower AeroLift before attempting to drill holes. When attaching projector bracket to plate, make sure screws are short enough that they do not touch the motor/roller above the plate when lift is closed.

Unit and projection system should be operated, checked and adjusted as necessary at this time (see Sec. 9 for limit adjustment procedures).

CAUTION: Keep fingers and other objects away from ceiling closure when unit is operating. Serious injury or damage can result.



Section 5 - Operation

CAUTION: When operating for the first time, cycle unit down and up several times to confirm satisfactory operation. Be prepared to cut POWER if necessary.

- **110-120V SINGLE STATION CONTROL** - 3-position UP-OFF-DOWN switch permits operation to be stopped at any point. Factory adjusted limit switches automatically stop screen when fully down or fully up.

Optional Controls

- **24V CONTROL** - 3-button UP-STOP-DOWN switches stop at any point desired and operate in any sequence. Factory adjusted limit switches automatically stop screen when fully up or fully down. Installer should incorporate an all-pole disconnect in fixed wiring available with RF or IR remote.
- **KEY OPERATED SWITCHING** - Two key-operated switches optionally available with this unit:
 - Key-operated power supply switch controls power to screen and switches. When "off", switches will not operate screen. Key may be removed from switch in either "on" or "off" position.
 - Three-position key switch permits the screen to be operated directly by key. Requires screen operator to have a key.
- **RS232 / ETHERNET** - Serial communication and network communication optionally available.

Section 6 - Testing Safety Limit Switches

CAUTION: The AeroLift 100/150 is equipped with two Safety Limit Switches (see "Adjustments"). This switch may be damaged during shipping or by rough handling on the job site.

1. After the AeroLift 100/150 has been installed in the ceiling, but before the projector and closure are attached, the Safety Limit must be tested.
2. Use a screwdriver or other tool to hold down the Safety Limit Switch. While holding down Safety Limit Switch, other installer should operate the unit. If the unit works, Safety Limit Switch is broken and must be replaced.

CAUTION: Operating the unit without a functioning Safety Limit Switch could cause the unit's motor to continue operating after the lift is closed, leading to a failure and the possibility of damage or injury.

Please Note: As weight is applied to the AeroLift 100/150, the projector plate may shift slightly. If this occurs, use set screws on bottom of fabric roller brackets to compensate for shift and level projector plate.

Section 7 - Electrical Connections

Lift operates on 110-120V, 60 Hz. current. Lift ships with internal wiring complete and control switch(es) fully boxed.

Wire to connect lift to switch(es) and switch(es) to power supply should be furnished by installer.

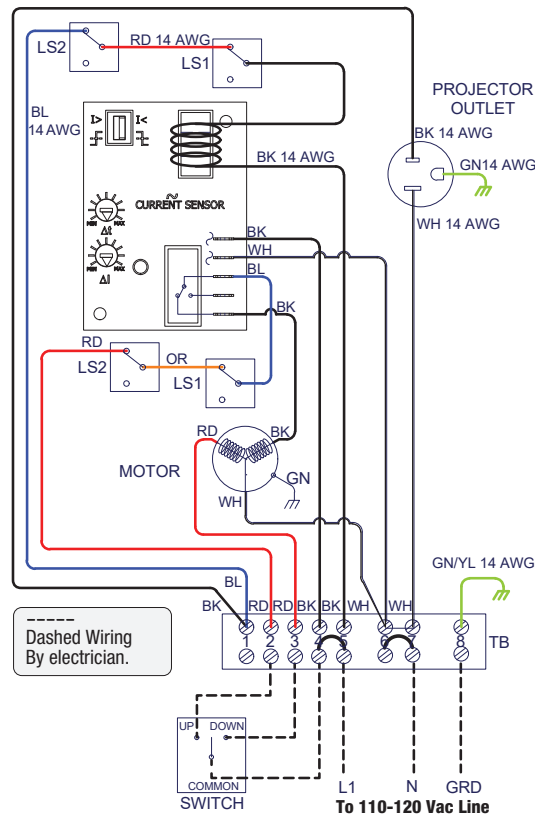
Please Note: Lift must be installed in accordance with requirements of Local Building Codes, Canadian Electrical Code (CEC), CAN/CSA C22.1 and National Electric Code (NEC), NFPA 70. An appropriate disconnect device shall be provided as part of building installation.

CAUTION: All operating switches should be "off" before power is connected.

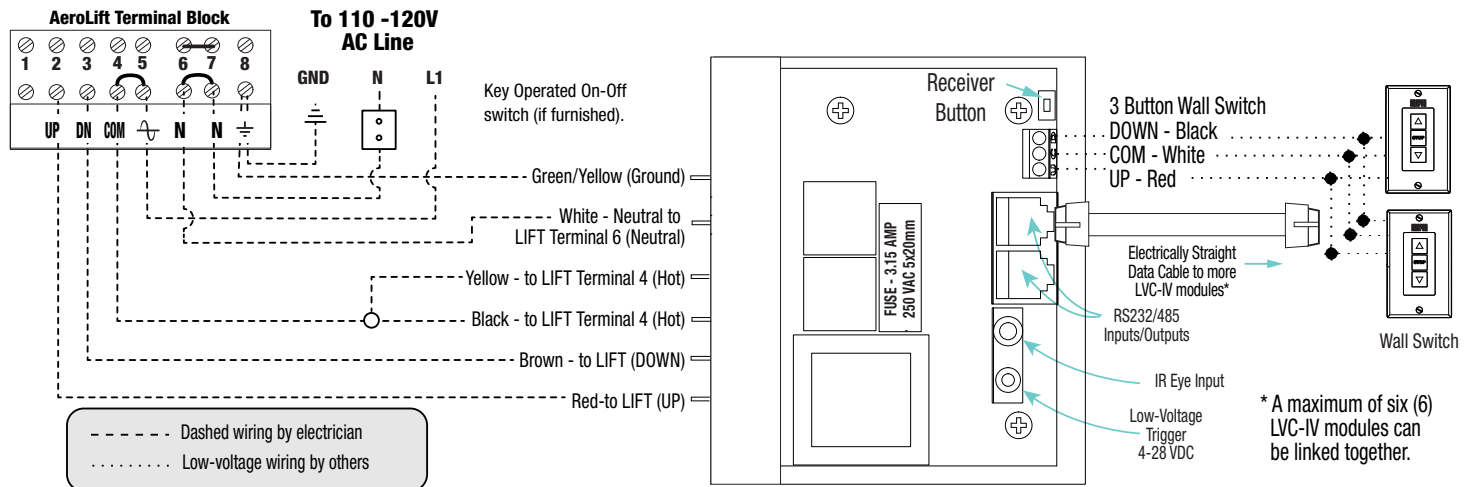
Terminal strip for field connections is located inside a junction box on the end of the unit. Unit ships with internal lift wiring complete to terminal strip. Use switch to lower lift and remove packing. Remove temporary wiring and complete permanent wiring to electricity and to switches. Wire to connect unit to power supply and to switches should be furnished by installer. Connections should be made in accordance with wiring diagram. AeroLift 100/150 should be operated and checked prior to installing projector and/or optional ceiling closure.

Section 8 - Wiring Diagrams

Single Station Control



LVC-IV - Low Voltage Controller



Section 9 - Adjustments

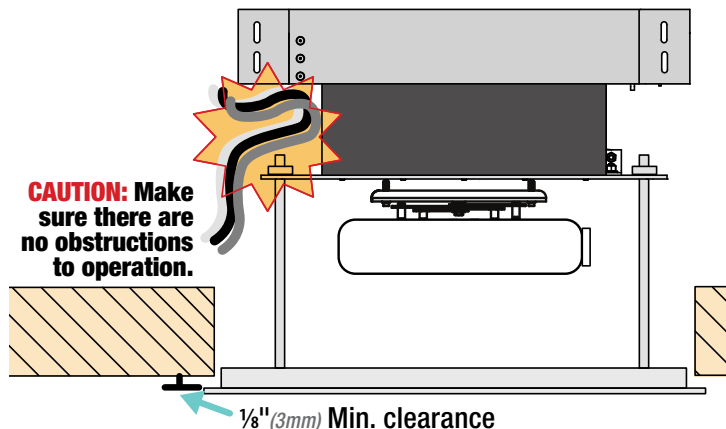
CAUTION: Be sure all switches are in "off" position before adjusting limit switches. Always be prepared to shut lift off manually when new adjustment is being tested.

Limit switches for the AeroLift are preset at the factory. The "Up" (*closed*) limit switch is set for fully closed. The "down" (*show*) limit switch is set for fully lowered. Once unit is in place, the "down" limit switch may need to be changed to stop the AeroLift closer to the ceiling (*that is, to raise the "down" position*). Limit switches are located on the end of roller, and are accessible by removing the cover of the junction box at the left end of the unit. To adjust the limit switches, use a $\frac{1}{2}$ " (4mm) screwdriver/hex key.

CAUTION: It is not uncommon to overheat the motor during initial installation when setting limits. The motor is thermally protected and will stop working until it has cooled to a safe temperature before it will start operating again. DO NOT physically pull the unit down when this occurs.

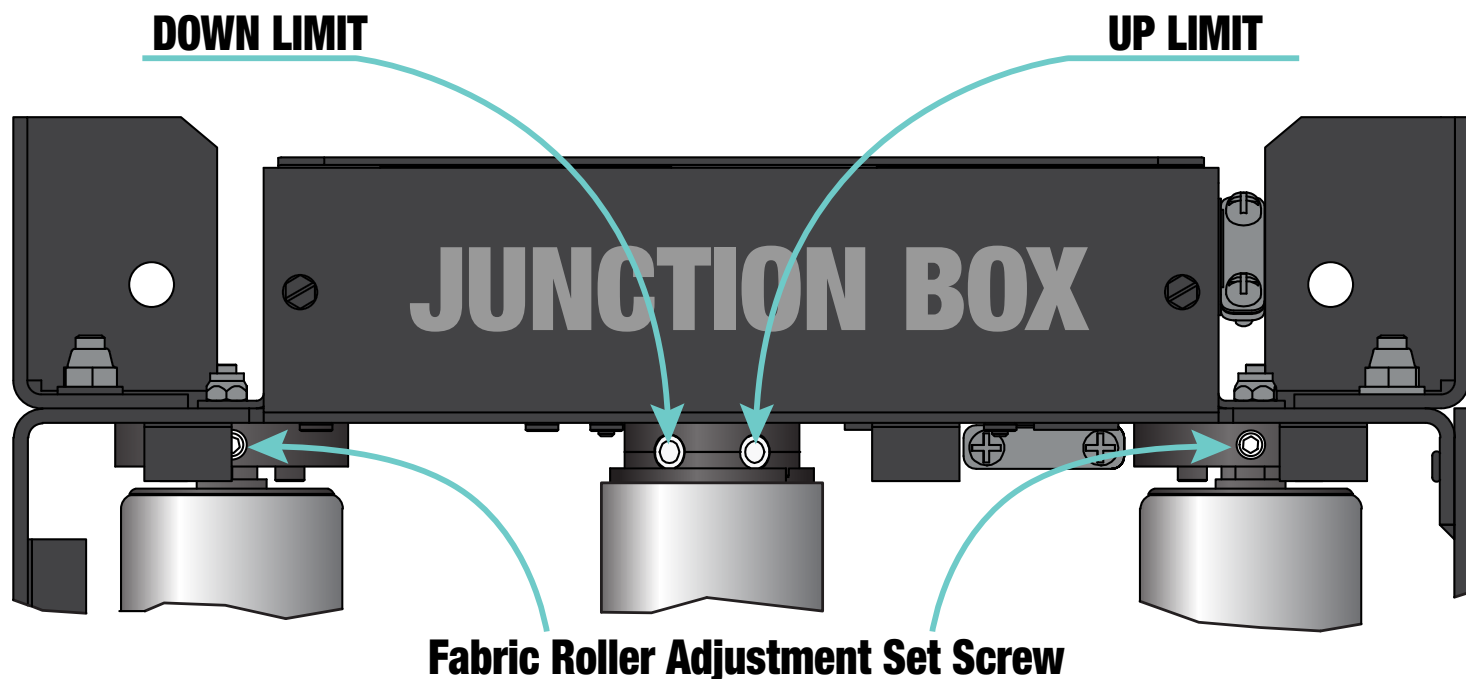
Adjusting "Down" (SHOW position) — "Down" position may be adjusted by turning the DOWN limit switch adjustment socket. Turning the socket clockwise will stop the AeroLift closer to the ceiling. Turning it counter-clockwise will cause the lift to stop at a lower point.

Adjusting "Up" (CLOSED position) — Because the "up" (*closed*) position is preset at the factory, Draper does not recommend changing this position using the limit switch. The "up" position of the closure may be changed by changing the length of threaded rod. If necessary, however, "up" position may be adjusted by turning the "up" limit switch adjustment socket. Turning the socket counterclockwise creates a higher, or more fully closed position. Turning it clockwise creates a lower "up" (*closed*) position.



CAUTION: Make sure limit switch is set so that AeroLift motor is NOT still running after lift is closed. If it continues to cycle once lift is closed, a failure may occur, making unit descend rapidly and causing damage and/or injury.

Please Note: If load is off-center of pan, it may be necessary to adjust pitch of fabric rollers. One set screw is provided on each end of both fabric rollers (*see drawing*). Use these to adjust roller pitch to keep entire fabric panel taut, so load is evenly distributed. Use $\frac{1}{8}$ " (3mm) hex key to adjust.



Section 10 - Installing Ceiling Closure

If unit is equipped with a ceiling closure system, use either as is, or in conjunction with a piece of existing ceiling tile.

1. If installing with ceiling tile, it may be necessary to cut tile so overall dimensions are same as (or slightly less than) closure panel. Place tile into trim frame. Lay closure panel on top (back side) of ceiling tile, and tighten screws to hold in place.
2. If installing large closure, attach brackets to bottom of projector plate.
3. Attach $\frac{5}{16}$ " (8mm) threaded rods to slots in projector plate or brackets.

CAUTION: Ensure bolts and nuts attaching brackets to AeroLift are completely tightened.

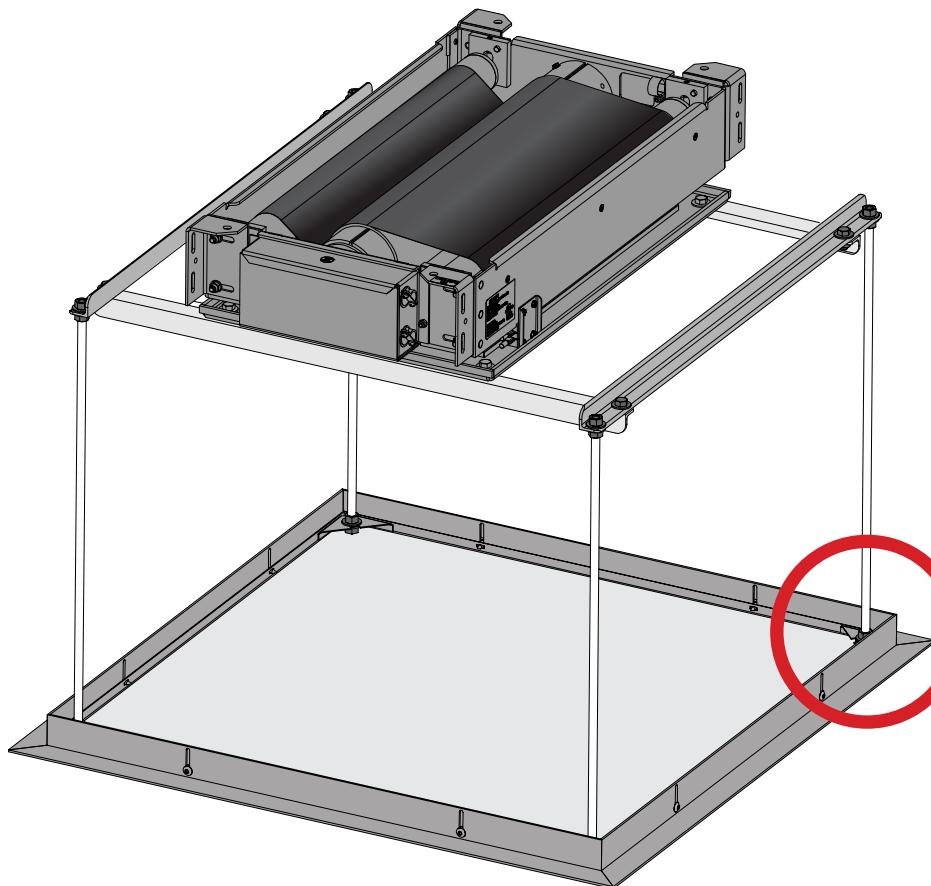
4. Run unit "up" until bottom pan stops at highest position. Mark position on $\frac{5}{16}$ " (8mm) rods flush with ceiling level and cut rods to length (removing from pan if convenient).
5. Run unit "down" until bottom pan stops at "show" position.
6. Attach closure to lower end of $\frac{5}{16}$ " (8mm) rods by slipping into four corner slots and secure with nuts above and below slots.
7. Run unit "up" again to highest position. Measure distance by which panel fails to reach required "closed" height for surrounding ceiling.

CAUTION: Make sure nuts are completely tightened.

8. Run unit "down" then re-adjust mounting of $\frac{5}{16}$ " (8mm) rods in traveling grid to raise panel required distance.
9. Test unit operation to confirm that panel will stop in closed position just before touching ceiling.

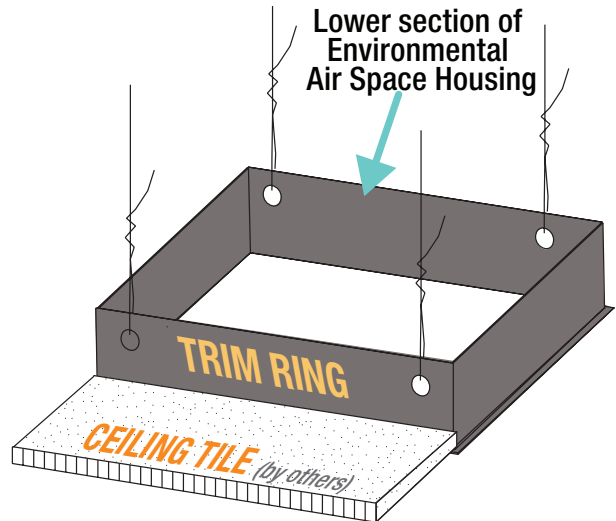
CAUTION: DO NOT hang from, "ride," or pull down on unit. This could create a failure and cause damage and/or injury.

PLEASE NOTE: Immediately upon completing surrounding ceiling, operate unit to confirm that optional ceiling closure panel stops $\frac{1}{8}$ " (3mm) short of ceiling in closed position. If closure panel touches ceiling, motor may continue operating after lift is closed. If it continues to cycle once lift is closed, a failure may occur, making unit descend rapidly and cause damage and/or injury.



Section 11 - Installing Ceiling Trim Kit (Optional)

1. Install AeroLift 100/150.
2. Install bottom section of housing in opening by suspending with wire, or by mounting directly to the ceiling joists (if space permits).
3. Install projector and attach optional ceiling closure.



For Additional Safety:

1. Be sure the nuts that attach the threaded rods to the closure panel are tight.
2. Wrap a plastic wire tie around the mounting tab and the threaded rod at all four corners of the closure panel.

CAUTION: Do NOT use a paper-covered or similar wire tie — use only plastic wire ties for maximum safety.

